



Grant Agreement No.: 637261

Project acronym: E2VENT

Project title: Energy Efficient Ventilated Facades for Optimal Adaptability and Heat Exchange enabling novel NZEB architectural concepts for the refurbishment of existing buildings

Research and Innovation Action

Topic: EeB-02-2014 Adaptable envelopes integrated in building refurbishment projects

Starting date of project: 1st of January 2015

Duration: 42 months

D7.3 – Project description, leaflet and presentations

Organisation name of lead contractor for this deliverable: FENIX		
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Dissemination Level		
PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	

Document history

History			
Version	Date	Author	Comment
1	25.6.2015	FENIX	Document created
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Executive Summary

The Deliverable D7.3 is a public document of the E2VENT project, delivered in the context of WP7 Dissemination, Task 7.2 Communication material and Promotion. The objective of WP7 is to secure the successful dissemination of the E2VENT project through the implementation and deployment of an awareness and dissemination plan.

The purpose of this document is to describe the activities that were carried on during the first six months of the E2VENT project in order to prepare and support the project dissemination material, in particular including project description, leaflet, poster, and project presentation. The document describes in detail different types of dissemination materials produced, process and players that have contributed to their preparation.

1 Introduction

E2VENT project will develop, demonstrate and validate a cost effective, high energy efficient, low CO₂ emissions, replicable, low intrusive, systemic approach for retrofitting of residential and commercial buildings, able to achieve NZEB retrofit standard levels, through the integration of an innovative adaptive ventilated façade system, including embedded, breakthrough smart modular heat recovery units, which allow thermal storage mode and cost-effective, easy to install, high performance adapted products for external thermal insulation.

The Deliverable D7.3 is a public document of the E2VENT project, delivered in the context of WP7, Task 7.2 Communication material and Promotion. The objective of WP7 is to secure the successful dissemination through the implementation and deployment of an awareness and dissemination plan to identify and organise the activities to be performed in order to promote the commercial exploitation of the project's results and the widest dissemination of knowledge from the project. The plan is expanded in two directions: towards the marketing activities in order to enhance the commercial potential of the system and towards the notification of project's results in the scientific, EC and general RTD sector.

A relevant part of the dissemination activities foreseen in the project depends on the production of high quality dissemination material able to communicate project results and activities to the target audience. For this purpose group of initial dissemination tools were developed to support communication and dissemination, and in particular:

- Project leaflet
- Project roll-up poster
- Project description
- PowerPoint presentation

This document describes the delivered material that has been produced during the first six months of the E2VENT project.

2 Dissemination material

For the first six months of the project initial dissemination material has been developed to support communication and dissemination activities of the E2VENT project as part of the task T7.2 Communication material and Promotion. The dissemination material was created preferably in English language and will be updated every six months after the each project meeting following the project progression, considering the future translation to partners' mother language. All dissemination material has been uploaded into E2VENT project website.

2.1 Project logo

Initial task for the dissemination material design is logo development, which has been created in vector resolution at the beginning of the project in order to define a project identity, and clearly to identify any kind of internal or public document (deliverables, reports, internal communications, publications, etc.).

The corporate image of E2VENT rests upon the use of two color tones dark and two color tones light (dark blue and red indexed by RGB 13, 22, 80 and RGB 156, 1, 5; light blue and red indexed by RGB 109, 116, 151 and RGB 194, 103, 106) and their shading, font used is Century Gothic. The logo captures the main theme of two arrows representing the air ventilation.



Picture 1 : Home section

Project logo can be used in the following cases:

- in all documents developed under the framework of the E2VENT project; in documents to be submitted to the EC (e.g. deliverables)
- in project presentations and in dissemination material to be used for communication and dissemination activities carried out by each project participant under the framework of the project
- in E2VENT website, and in websites of the project participants with a link to the project website

2.2 Project leaflet

The four pages leaflet (format A5, 210x147) has been designed for the E2VENT project by the end of month 6 with more general overview about the project by FENIX who is responsible for any dissemination update related to any progress of the project.

The leaflet is describing project goals, environmental, technical and architectural targets, social and environment impact, innovative components which will be developed within the project, prototype and pilot information, website link and qr code, logos of partners and statement of financial support to indicate that the foreground was generated with the assistance of financial support from the Community.

Following the project evolution also scientific leaflet is planned to be developed for the specific target audience.

PROTOTYPE

Prototypes performance will be firstly tested on the future façade test bench of Nobatek allowing a setting step. Two pilot buildings will be renovated with E2VENT systems. One is in Gdansk, Poland, and another in Burgos, Spain in order to test the E2VENT system in two different climates. All along the year possible users, financiers, and partners will be consulted to develop a solution matching market needs.

Demo building in Burgos, Spain Demo building in Gdansk, Poland

façade test bench of Nobatek with the E2VENT system

PARTNERS

Energy Efficient Ventilated Façades

Energy Efficient Ventilated Façades for Optimal Adaptability and Heat Exchange enabling novel NZEB architectural concepts for the refurbishment of existing buildings.

HORIZON 2020 RESEARCH PROJECT

This project is supported by the European Commission under the Energy Theme of the Horizon 2020 for research and Technological development.

H2020 EeB-2014-2015/H2020 EeB-2014
Grant Agreement number: 637261

WWW.E2VENT.EU

This brochure presents the project status of June 2015. Produced and designed by FENKINT s.r.l.s. www.fenkint.it 2015 © All rights reserved.

INTRODUCTION

E2VENT will develop, demonstrate and validate a cost effective, high energy efficient, low CO₂ emissions, replicable, low intrusive, systemic approach for retrofitting residential and commercial buildings, able to achieve NZEB retrofit standard levels, through the integration of an innovative adaptive ventilated facade system, including:

- Embedded, breakthrough smart modular heat recovery units, which allow thermal storage mode
- Cost-effective, easy to install, high performance adapted products for external thermal insulation

DESCRIPTION

The **E2VENT system** is an external thermal refurbishment solution with external cladding and air cavity. The distinctive feature of this system is the Smart Modular Heat Recovery Unit allowing us to recover energy from the extracted air while performing the air renewal using double flux heat exchanger in the air cavity. This way the E2VENT system enhances the energetic performance of the building and fresh air renewal does not decrease it.

Aiming at providing a heat storage system for the reduction of peak of electricity consumption and/or for cooling in summer, a Latent Heat Thermal Energy Storage based on phase change materials properties may be implemented if needed.

Developed technologies will be implemented into the ventilated façade, and a smart façade management system will control the system functioning on a real time basis. The management system will communicate with existing systems, receiving predicted weather data and allowing its integration in a global control system targeting optimal performances.

E2VENT retrofitting system can be adaptable to different types of buildings and climates, which makes the system very versatile. In addition, the accessibility to the components of the system will be easy, increasing the possibility to adapt the new system to the needs of the end user, facilitate the future renovations and/or to replace the current E2VENT system with new products that can provide the market.

IMPACT

The predicted impact is a **40% reduction of primary energy needs** and of CO₂ production and a global reduction of energy needs in order to achieve in fine a **25 kWh/m²/an primary energy** consumption. The main target of E2VENT system is the market associated to the retrofitting of suburban multi-story residential buildings. Those buildings are found in all Europe and can be characterized by their insulation weakness and bad air quality due to the lack of air renewal system. Low architectural interest can also define those building that mostly have been built in the 60's-70's. E2VENT project aims as a final target to achieve Passive-Haus level.

ENVIRONMENTAL OBJECTIVES

- Combining energy efficiency and innovative technologies
- Evaluation parameters (CO₂ amount, air age, indoor air temperature, IAQ)
- Increasing of thermal resistance and the inner air temperature, improving thermal comfort of end user
- LCA approach for the lowest possible impact of the system
- Minimum energy requirements

TECHNICAL OBJECTIVES

- Smart modular heat recovery unit (SMHRU) in the ventilated facade cavity
- Recover heat from ventilation air (preheating in winter, precooling in summer)
- Studying the energy recovery potential of the SMHRU
- Developing a latent thermal heat energy storage system (LTHES)
- Building energy management system using thermal and presence sensors

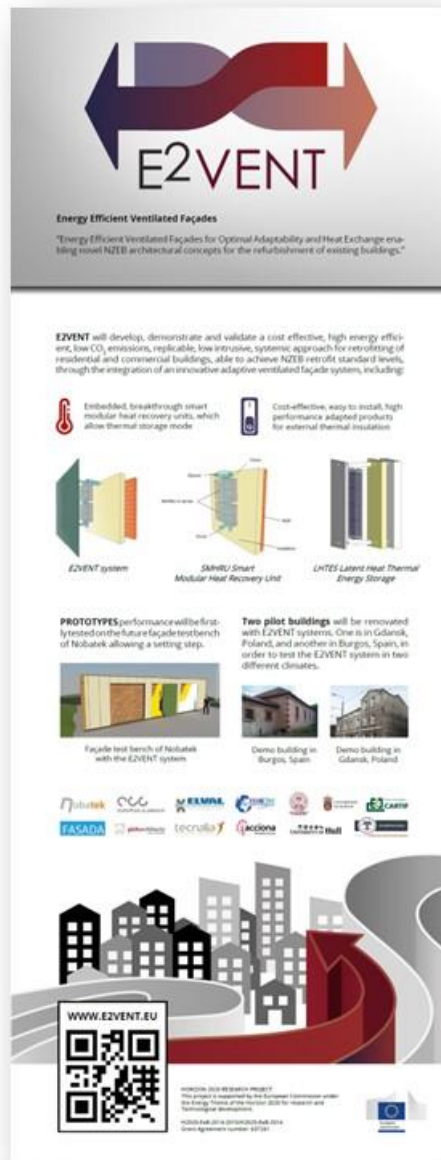
ARCHITECTURAL OBJECTIVES

- Modular ventilated facade system (avoiding onsite installation mistakes, performance losses)
- Easy and affordable access for maintenance jobs or all technologies and components
- High adaptability degree (different scenarios and climate zones)
- Improving aesthetic of the building, increasing its economic and social value
- Increasing durability of the envelope, raising life expectancy of the building

Picture 2 : project leaflet

2.3 Project roll-up poster

The one page roll-up poster (format 85x220) has been designed for the E2VENT project by the end of month 6 following the leaflet design by FENIX. The roll-up poster is describing project goals, innovative components which will be developed within the project, prototype and pilot information, website link and qr code, logos of partners and statement of financial support to indicate that the foreground was generated with the assistance of financial support from the Community.



Picture 3 : Project roll up poster

2.4 Project description

The two pages project description in the form of flyer has been designed for the E2VENT project by the end of month 3 following the leaflet and poster design by NOBATEK, describing context and concept of the project, prototype and pilot information, website link and qr code, logos of partners and statement of financial support to indicate that the foreground was generated with the assistance of financial support from the Community.



Energy Efficient VENTilated Facades for Optimal Adaptability in the refurbishment of buildings

Call Ee82014/Topic2/H2020: Adaptable envelopes integrated in building refurbishment projects

CONTEXT

The main target of E2VENT system is the market associated to the retrofitting of suburban multi-storey residential buildings. Those buildings are found in all Europe and can be characterized by their insulation weakness and bad air quality due to the lack of air renewal system. Low architectural interest can also define those building that mostly have been built in the 60's-70. Best practices in the thermal refurbishment of those buildings: envelop usually consist in replacing windows and providing external insulation on the opaque part. This way better performances are achieved without reducing the living surface. Nevertheless, to insulate the envelop reduces fresh air renewal and implies a worst air quality. Therefore the installation of air ventilation is needed and should be implemented with double flux heat exchanger in order not to increase the energy consumption.

CONCEPT

The E2VENT system that we will develop is an external thermal refurbishment solutions with external cladding and air cavity (figure 1). The distinctive feature of this system is the Smart Modular Heat Recovery Unit allowing us to recover energy from the extracted air while performing the air renewal using double flux heat exchanger in the air cavity (figure 2). This way the E2VENT system enhances the energetic performance of the building and fresh air renewal does not decrease it. Aiming at providing a heat storage system for the reduction of peak of electricity consumption and/or for cooling in summer, a Latent Heat Thermal Energy Storage based on phase change materials properties may be implemented if needed (figure 3).



Figure 1: E2VENT system



Figure 2: SMWU Smart Modular Heat Recovery Unit



Figure 3: LNTES Latent Heat Thermal Energy Storage

Information:
 Project start: 01/01/2015
 Project duration: 42 month
 Project's global budget: 3 402 790 €

Developed technologies will be implemented into the ventilated façade, and a smart façade management system will control the system functioning on a real time basis. The management system will communicate with existing systems, recovering predicted weather data and allowing its integration in a global control system targeting optimal performances.

The predicted impact is a 40% reduction of primary energy needs and of CO₂ production and a global reduction of energy needs in order to achieve in fine a 25 kWh/m²/an primary energy consumption.

DEMONSTRATION

Prototypes performance will be firstly tested on the future façade test bench of Nobatek allowing a setting step. Two pilot buildings will be renovated with E2VENT systems. One is in Gdansk, Poland, and another in Burgos, Spain, in order to test the E2VENT system in two different climates. All along the year possible users, financiers, and partners will be consulted to develop a solution matching market needs.



Figure 4: Overview of the facade test bench of Nobatek with the E2VENT system



Figure 5: View of the demo building in Gdansk, Poland



Figure 6: View of the demo building in Burgos, Spain

PARTNERS





























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This project is supported by the European Commission under the Energy Theme of the Horizon 2020 for research and Technological development.

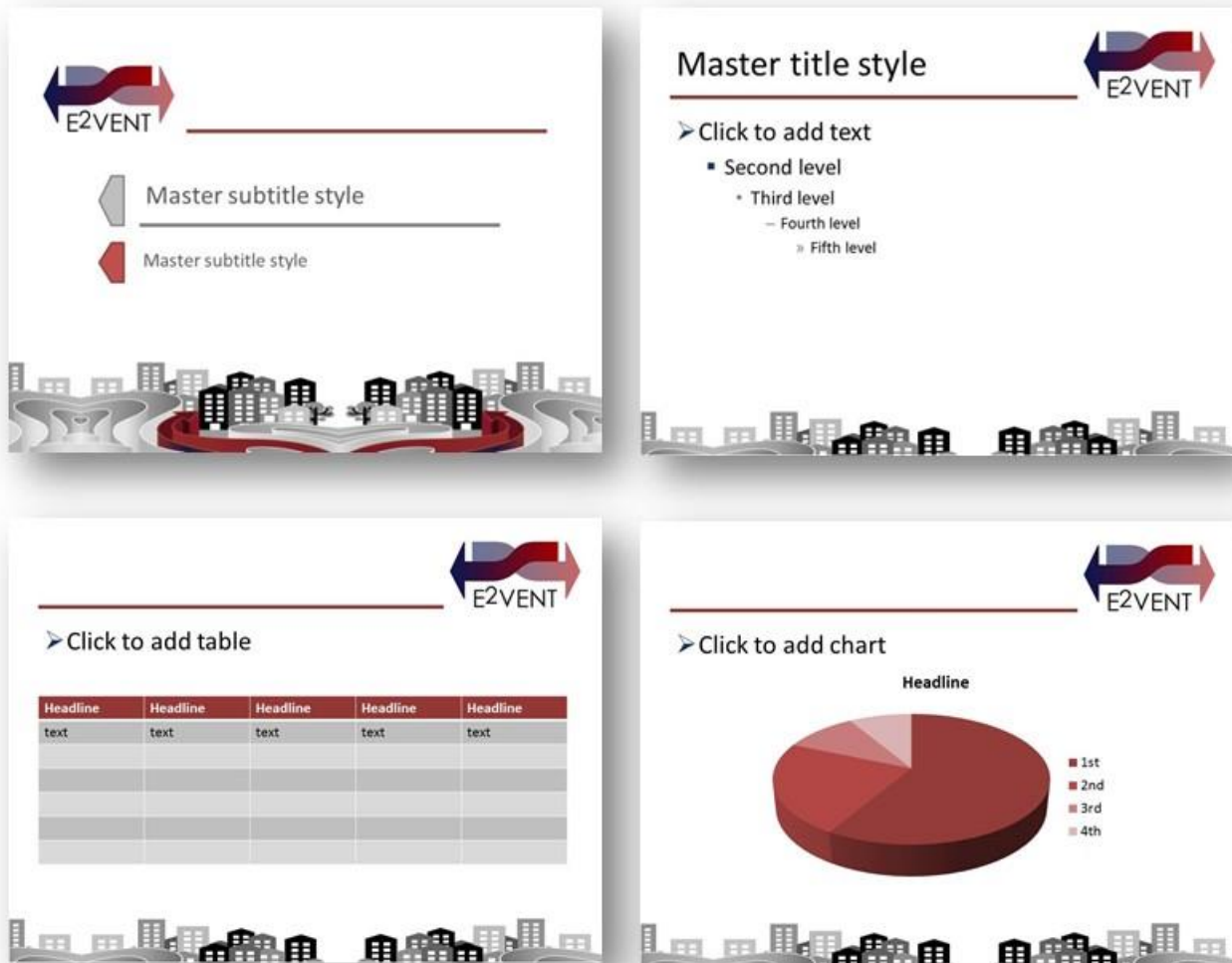
H2020-E4B-2014-2015 Grant Agreement number 837261



Picture 4 – project description

2.5 PowerPoint template

For the purpose of various presentations during the project life simple PowerPoint template has been created.



Picture 4: Powerpoint template

2.6 PowerPoint project presentation

The project presentation in PowerPoint has been designed for the E2VENT project by the end of month 6 following the leaflet and poster design by FENIX, describing context and concept of the project, objectives, prototype and pilot information, website link and qr code, partners and statement of financial support to indicate that the foreground was generated with the assistance of financial support from the Community.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement number: 637261.



Energy Efficient VENTilated Facades for Optimal Adaptability in the refurbishment of buildings

Event name _____
 Company, speaker _____
 Location, date _____



Introduction



42 Months project | 13 Partners | Work packages | 3,4 Million budget


Call Ee82014-Topic2-H2020: Adaptable envelopes integrated in building refurbishment projects

E2VENT project will develop, demonstrate and validate a cost effective, high energy efficient, low CO₂ emissions, replicable, low intrusive, systemic approach for retrofitting of residential and commercial buildings, able to achieve NZEB retrofit standard levels, through the integration of an innovative adaptive ventilated façade system, including:

- Smart modular heat recovery units, which allow thermal storage mode
- Cost-effective, easy to install, high performance adapted products for external thermal insulation
- Energy efficient HVAC systems



Context




➢ Target of E2VENT system:

- market associated to the retrofitting of suburban multi-storey residential buildings mostly built in the 60's-70 (insulation weakness and bad air quality due to the lack of air renewal system)


➢ Best practices in the thermal refurbishment of those buildings' envelop:

- replacing windows and providing external insulation on the opaque part (better performances are achieved without reducing the living surface X to insulate the envelop reduces fresh air renewal and implies a worst air quality)

The installation of air ventilation is needed and should be implemented with double flux heat exchanger in order not to increase the energy consumption.



Objectives




➢ Environmental

- Combining energy efficiency and innovative technologies
- Evaluation parameters: CO₂ amount, air age, indoor air temperature, IAQ
- Increasing of thermal resistance and the inner air temperature, improving thermal comfort of end user
- LCA approach for the lowest possible impact of the system
- Minimum energy requirements

➢ Technical

- Smart modular heat recovery unit (SMHRU) in the ventilated facade cavity
- Recover heat from ventilation air (preheating in winter, precooling in summer)
- Studying the energy recovery potential of the SMHRU
- Developing a latent thermal heat energy storage system (LTHES)
- Building energy management system using thermal and presence sensors



Objectives



➤ Architectural

- Modular ventilated facade system (avoiding onsite installation mistakes, performance losses)
- Easy and affordable access for maintenance jobs or all technologies and components
- High adaptability degree (different scenarios and climate zones)
- Improving aesthetic of the building, increasing its economic and social value
- Increasing durability of the envelope, raising life expectancy of the building

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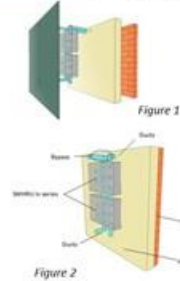
Concept



➤ The E2VENT system is an external thermal refurbishment solutions with external cladding and air cavity (figure 1).

➤ The **Smart Modular Heat Recovery Unit** allows to recover energy from the extracted air while performing the air renewal using double flux heat exchanger in the air cavity (figure 2).

➤ This way the E2VENT system enhances the energetic performance of the building and fresh air renewal does not decrease it.



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Concept



➤ Aiming at providing a heat storage system for the reduction of peak of electricity consumption and/or for cooling in summer, a **Latent Heat Thermal Energy Storage** based on phase change materials properties may be implemented if needed (figure 3).



➤ Developed technologies will be implemented into the ventilated façade, and a **smart façade management system** will control the system functioning on a real time basis. The management system will communicate with existing systems, recovering predicted weather data and allowing its integration in a global control system targeting optimal performances.

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Impact

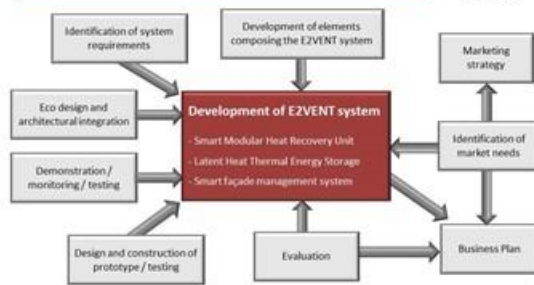


The retrofitting kit to be developed is expected to have a payback period of less than 7 years. Actions to be carried out:

- To develop new energy efficient dynamical technologies
 - To integrate developed technologies and components as a perfect fabrication kit, keeping modularity which allows industrialised adaptable solutions and the possibility of the system to be specifically designed for different buildings, in a cost-effective way.
- Industrial and market impact - stimulating the retrofitting sector in Europe, providing a holistic approach for building retrofitting, resulting in a cost effective retrofitting solution.
- The system will be designed to guarantee user acceptability, focusing on non intrusiveness and cost-effectiveness with a minimum payback period.
- The predicted impact is a 40% reduction of primary energy needs and of CO₂ production and a global reduction of energy needs in order to achieve in fine a 25 kWh/m²an primary energy consumption.

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Work Plan



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Demonstration



- Prototypes performance will be firstly tested on the future façade test bench of Nobatek allowing a setting step.
- Two pilot buildings will be renovated with E2VENT systems (Gdansk - Poland, Burgos - Spain) to test the E2VENT system in two different climates.



Overview of the façade test bench of Nobatek with the E2VENT system



View of the demo building in Gdansk, Poland



View of the demo building in Burgos, Spain

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Partners



	Participant organisation name	Country	Type
1	NOBATEK	France	RTO
2	FUNDACION TECNALIA RESEARCH & INNOVATION	Spain	RTO
3	D'APPOLONIA	Italy	LE
4	ACCIONA	Spain	LE
5	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	Greece	UNI
6	EUROPEAN ALUMINIUM ASSOCIATION	Belgium	SME
7	FUNDACION CARTIF	Spain	RTO
8	HELLENIC ALUMINIUM INDUSTRY	Greece	LE
9	FENIX	Czech Rep.	SME
10	UNIVERSIDAD DE BURGOS	Spain	UNI
11	FASADA	Poland	SME
12	PICH-AGUILERA ARQUITECTOS	Spain	SME
13	UNIVERSITY OF HULL	UK	UNI



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Partners





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Contact



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Visit the project's website for more information:
www.e2vent.eu





This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement number: 637261.



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Picture 5 : Project presentation in powerpoint

3 Future work

- Scientific leaflet creation
- Dissemination material translation to partners' language
- Continuous update of dissemination material based on the project progress
- Newsletter design
- Project promo video creation

4 Conclusion

All dissemination material - flyer, leaflet, poster and project presentation has been designed and created with intention of every 6 months update following the project progress and can be found on the project website public section - documents. Scientific leaflet is planned to be created besides the commercial one for the specific target audience. Dissemination material has been created preferably in English language, considering future translation in partners' mother language.